



## Features

- Smaller size of 1210
- Fast tripping resettable circuit protection
- Surface mount packaging for automated assembly
- Agency recognition: UL, CSA, TUV

**RELAYS**

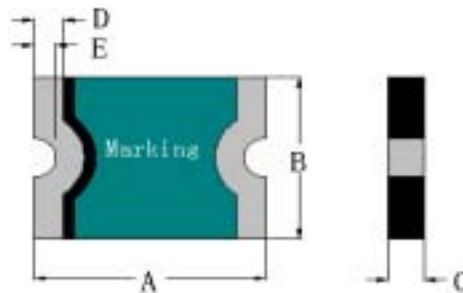


**LP-USM** series

Surface-mount devices

## Product Dimensions(mm) & Marking System

Part number	A Max	B Max	C Max	D Typ.	E Typ.	Part marking
LP-USM005	3.43	2.80	1.25	0.60	0.20	W0
LP-USM010	3.43	2.80	1.25	0.60	0.20	W1
LP-USM020	3.43	2.80	1.25	0.60	0.20	W2
LP-USM035	3.43	2.80	0.85	0.60	0.20	W3
LP-USM050	3.43	2.80	0.85	0.60	0.20	W4
LP-USM075	3.43	2.80	1.30	0.60	0.20	W5
LP-USM110	3.43	2.80	1.30	0.60	0.20	W6
LP-USM150	3.43	2.80	2.25	0.60	0.20	W7



Top View

Side View

## Electrical Characteristics

Part number	I <sub>H</sub> (A)	I <sub>T</sub> (A)	V <sub>max</sub> (V)	I <sub>max</sub> (A)	T <sub>trip</sub> Current(A)    Time(S)	Pd <sub>typ</sub> (W)	R <sub>min</sub> ( )	R <sub>1max</sub> ( )
LP-USM005	0.05	0.15	30	10	1.5    0.25	1.0	3.60	50.0
LP-USM010	0.10	0.30	30	10	1.5    0.50	1.0	1.60	15.0
LP-USM020	0.20	0.40	30	10	8.0    0.02	1.0	0.80	5.0
LP-USM035	0.35	0.70	6	40	8.0    0.20	1.0	0.32	1.30
LP-USM050	0.50	1.00	13.2	40	8.0    0.10	1.0	0.25	0.90
LP-USM075	0.75	1.50	6	40	8.0    0.10	1.0	0.13	0.40
LP-USM110	1.10	2.20	6	40	8.0    0.30	1.0	0.06	0.21
LP-USM150	1.50	3.00	6	40	8.0    0.50	1.0	0.04	0.11

I<sub>H</sub>=Hold current: maximum current at which the device will not trip at 25 °C still air.

I<sub>T</sub>=Trip current: minimum current at which the device will always trip at 25 °C still air.

V<sub>max</sub>=Maximum voltage device can withstand without damage at rated current.

I<sub>max</sub>=Maximum fault current device can withstand without damage at rated voltage.

T<sub>trip</sub>=Maximum time to trip(s) at assigned current.

Pd<sub>typ</sub>=Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

R<sub>min</sub>=Minimum device resistance at 25 °C prior to tripping.

R<sub>1max</sub>=Maximum device resistance measured in the nontripped state 1 hour post reflow.

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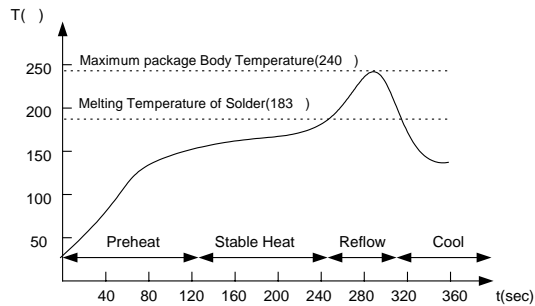
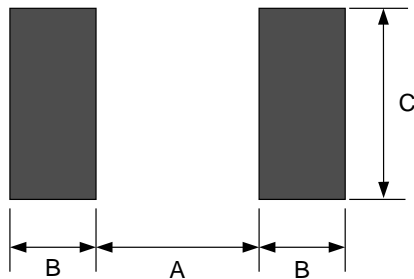
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## Test Procedures And Requirements

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25	$R_{min}$ R $R_{1max}$
Time to Trip	Specified current, $V_{max}$ , 25	T maximum Time to Trip
Hold Current	30min, at $I_H$	No trip
Trip Cycle Life	$V_{max}$ , $I_{max}$ , 100cycles	No arcing or burning
Trip Endurance	$V_{max}$ , 24hours	No arcing or burning

## Solder Reflow Recommendations



### Solder Pad Layouts

Part number	A (mm)	B (mm)	C (mm)
LP-USM005	2.00	1.00	2.50
LP-USM010	2.00	1.00	2.50
LP-USM020	2.00	1.00	2.50
LP-USM035	2.00	1.00	2.50
LP-USM050	2.00	1.00	2.50
LP-USM075	2.00	1.00	2.50
LP-USM110	2.00	1.00	2.50
LP-USM150	2.00	1.00	2.50

\* Recommended reflow methods: IR, Vapor phase oven, hot air oven, wave solder.

\* Devices can be cleaned using standard industry methods and solvents.

#### Notes:

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

## Package Information

Tape and Reel:

LP-USM005~ LP-USM110.....2000pcs per reel

LP-USM150.....3000pcs per reel